



## LX-630

### ALL PURPOSE, HIGH SOLIDS, DUAL-CURE DIRECT EMULSION

**LX-630** is an all purpose, high solids, dual-cure emulsion with excellent solvent resistance; for use in graphics, industrial, and textile printing applications. Blue-violet-colored LX-630 has good imaging qualities, excellent durability, and is easy to reclaim.

#### INSTRUCTIONS:

##### **Step 1: PREPARE THE FABRIC**

Used or surface treated fabric need only be degreased using **Screen Degreaser Liquid No. 3** or dilute **Screen Degreaser Concentrate No. 33**. (Mechanical roughening is an option for new fabric that is not surface treated. It increases the surface area of fabric for a better mechanical bond of the stencil, increasing printing run length. Use **Microgrit No. 2** before degreasing. Roughening and degreasing can be combined in one step with **Ulanogel 23**.)

##### **Step 2: SENSITIZE THE EMULSION**

To sensitize **LX-630**, add water up to the shoulder of the diazo bottle (supplied with the emulsion). Shake the container well until the diazo powder is completely dissolved. Add the diazo solution to the emulsion and mix thoroughly using a suitable tool made of stainless steel, glass, or plastic until the emulsion is uniform in color. Close the container. Wait at least one hour for the emulsion to debubble. Write the date of sensitizing on the label.

##### **Step 3: COAT THE SCREEN**

**Method 1:** Apply one coat of emulsion to the printing side, then one coat on the squeegee side. Dry the screen thoroughly.

**Method 2:** Apply two coats on the printing side, then two coats on the squeegee side, wet-on-wet. After each coating, rotate the screen 180°. Dry the screen thoroughly.

**Method 3:** Follow Method 2. Then, after drying the screen, apply two additional coats on the printing side, wet-on-wet. Dry the screen again. Method 3 optimizes the definition (acutance) of printed edges.

##### **Step 4: DRY THE SCREEN**

Dry multicoated screens (Methods 2 or 3) thoroughly in a horizontal position, printing side down, at room temperature in a dirt- and dust-free area. Use a fan to accelerate the drying. Ideally, dry the coated screen in a commercial drying unit, with warm, filtered air, up to 104° F (40° C). Use a dehumidifier in the drying area, if possible.

##### **Step 5: CALCULATE THE APPROXIMATE EXPOSURE TIME:**

From the Base Exposure Table (below), select the type of light source you have and its wattage or amperage. The exposure times shown are for 305/inch (120/cm.) white fabric at an exposure distance of 40 inches (=ca. 1 meter), using coating Methods 1, 2, or 3. The exposure time shown for your light source and coating method is your Base Exposure Time. Multiply your Base Exposure Time by all relevant Exposure Variable Factors (table, below) to find your Approximate Exposure Time.

##### **Step 6: DETERMINE THE OPTIMAL EXPOSURE TIME**

Make a Step Wedge Test (instructions can be found in the **Ulano Direct Emulsions Technical Data Booklet**) or use the **Ulano Exposure Calculator Kit**—carried through to actual printing—to determine your optimum exposure time. Optimum exposure is indicated: ■ At that exposure time when the emulsion first reaches its maximum color density and the edges of the positive do not "resolve." ■ The squeegee side emulsion is hard, not soft or slimy. ■ The print best duplicates the test positive *at the level of resolution that the job requires*.

##### **Step 7: WASHOUT**

Wet both sides of the screen with a gentle spray of cold water. Then spray the printing side forcefully until the image areas clear. Rinse both sides with a gentle spray until no soft emulsion is left on the squeegee side, and no foam or bubbles remain. Blot excess water from the printing side with newsprint (unprinted newspaper stock).

##### **Step 8: BLOCKOUT AND TOUCHUP**

**Blockout Option 1:** With water-based inks, before drying and exposure, use excess emulsion from the coating step to cover the blockout area.

**Blockout Option 2:** When using solvent-based inks, dry the screen after exposure and washout. Apply **Screen Filler No. 60** or **Extra Heavy Blockout No. 10**.

**Touchup Option 1:** When using water-based inks, use excess emulsion and re-expose the screen.

**Touchup Option 2:** When using solvent-based inks, use **Screen Filler No. 60** or **Extra Heavy Blockout No. 10** thinned with water.

# Technical Data Sheet



## Step 9: RECLAIM THE SCREEN

Remove ink with the appropriate solvent. Rinse the screen with water. Degrease the screen with **Screen Degreaser Liquid No. 3** to remove ink residues. Rinse with a forceful spray. Brush **Stencil Remover Liquid No. 4** or **Stencil Remover Paste No. 5** on both sides of the screen. Do not let the stencil remover dry on the screen. Wash with a forceful spray of water. Use **Haze Remover Paste No. 78** or **Ghost Remover** and **Ghost Remover Activator** to remove ink and haze residues.

**BASE EXPOSURE TABLE** (for 304/inch (120/cm) white polyester or nylon at 40 inches (100cm) exposure distance).

| Carbon Arc                | Coating Method 1 | Coating Method 2 | Coating Method 3 |
|---------------------------|------------------|------------------|------------------|
| 15 amps                   | 192 sec.         | 9.6 min.         | 12 min.          |
| 30 amps                   | 96 sec.          | 288 sec.         | 6.5 min.         |
| 40 amps                   | 72 sec.          | 216 sec.         | 288 sec.         |
| 60 amps                   | 48 sec.          | 144 sec.         | 192 sec.         |
| 110 amps                  | 26 sec.          | 80 sec.          | 108 sec.         |
| <b>Metal Halide</b>       |                  |                  |                  |
| 1000 watts                | 44 sec.          | 124 sec.         | 164 sec.         |
| 2000 watts                | 22 sec.          | 62 sec.          | 82 sec.          |
| 3000 watts                | 15 sec.          | 41 sec.          | 52 sec.          |
| 4000 watts                | 11 sec.          | 31 sec.          | 41 sec.          |
| 5000 watts                | 8 sec.           | 24 sec.          | 31 sec.          |
| <b>Pulsed Xenon</b>       |                  |                  |                  |
| 2000 watts                | 115 sec.         | 336 sec.         | 372 sec.         |
| 5000 watts                | 46 sec.          | 134 sec.         | 180 sec.         |
| 8000 watts                | 29 sec.          | 84 sec.          | 115 sec.         |
| <b>Mercury Vapor</b>      |                  |                  |                  |
| 250 watts                 | 4 min.           | 11 min.          | 14 min.          |
| 2000 watts                | 29 sec.          | 82 sec.          | 106 sec.         |
| 4000 watts                | 15 sec.          | 41 sec.          | 52 sec.          |
| <b>Fluorescent Tubes*</b> |                  |                  |                  |
| FT 40 watts               | 2.5 min.         | 6 min.           | Not recommended  |

\*Base exposure times are for unfiltered black light, or super diazo blue tubes, at 4 – 6 inches (10 - 15 cm.) exposure distance. When using plant-light, filtered black light, and “daylight” tubes, use at least double the exposure times shown.

## EXPOSURE VARIABLE FACTORS (Factors for Variables Affecting Base Time)

| <b>Fabric:</b>                |                | <b>Viscosity Adjustment:</b>   |           |
|-------------------------------|----------------|--------------------------------|-----------|
| Steel/metalized polyester     | 2.0 – 4.0      | 5% dilution                    | 0.95      |
| Dyed Fabric                   | 1.5 – 2.0      | 10% dilution                   | 0.9       |
| 305T white polyester or nylon | 1.0            | 5% more viscous                | 1.1       |
| Finer than 330T (130T/cm)     | 0.7 - 0.9      |                                |           |
| Coarser than 250T (100T/cm)   | 1.1 - 2.0      |                                |           |
| Multifilament PET             | 1.3 – 1.5      | <b>High Heat and Humidity:</b> |           |
| <b>Exposure Distance:</b>     |                | Factor                         | 1.3 - 1.8 |
| 20"/50cm 0.25                 | 36"/90cm 0.81  |                                |           |
| 24"/60cm 0.36                 | 40"/100cm 1.00 | <b>Taped-up Positives:</b>     |           |
| 28"/70cm 0.49                 | 52"/130cm 1.69 | Factor                         | 1.2 - 1.3 |
| 32"/80cm 0.64                 | 60"/150cm 2.25 |                                |           |

**STORAGE:** Unsensitized emulsion can be stored for up to 1 year. Sensitized emulsion can be stored for 3 - 6 weeks at room temperature, and up to 3 months in a refrigerator. Store coated screens in a cold, dry, completely dark area until exposure.